Baseline Trash Load and Short-Term Trash Load Reduction Plan

Submitted by:

City of South San Francisco, 105 Belle Air Road, South San Francisco, CA 94080

In compliance with Provisions C.10.a(i) and C.10.a(ii) of Order R2-2009-0074

January 24, 2012

Page Intentionally Left Blank

City of South San Francisco
SHORT-TERM TRASH LOAD REDUCTION PLAN

CERTIFICATION STATEMENT

"I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted, is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Signature by Duly Authorized Representative:

Cassndra Prudhel 1-24-12

Cassndra Prudhel January 24, 2012
Technical Services Supervisor

TABLE OF CONTENTS

CERTIFICATION STATEMENT III

TABLE OF CONTENTS IV

LIST OF TABLES V

LIST FIGURES VI

PREFACE 1

1.0 INTRODUCTION 2

BASELINE TRASH GENERATION RATES PROJECT 2
TRASH LOAD REDUCTION TRACKING METHOD SUMMARY 3
SHORT-TERM TRASH LOAD REDUCTION PLAN 3

2.0 BASELINE TRASH LOADING ESTIMATE 5

PERMITTEE CHARACTERISTICS 5
DEFAULT TRASH GENERATION RATES (REGIONAL APPROACH) 6
JURISDICTIONAL AND EFFECTIVE LOADING AREAS 6
- *Federal and State of California Facilities and Roads (e.g., Interstates, State Highways, Military Bases, Prisons);* 6
- *Colleges and Universities (Private or Public);* 6
- *Non-urban Land Uses (e.g., agriculture, forest, rangeland, open space, wetlands, water);* 6
- *Communication or Power Facilities (e.g., PG & E Substations);* 6
- *Water and Wastewater Treatment Facilities; and* 6
- *Other Transportation Facilities (e.g., airports, railroads, and maritime shipping ports).* 6

PERMITTEE-SPECIFIC BASELINE TRASH LOADING RATES 8
Baseline Street Sweeping 8
Baseline Storm Drain Inlet Maintenance 9
Baseline Stormwater Pump Station Maintenance 9
BASELINE TRASH LOADING ESTIMATE 9

3.0 LOAD REDUCTION CALCULATION PROCESS 11

STEP #1: EXISTING ENHANCED STREET SWEEPING 11
STEP #2: TRASH GENERATION REDUCTION CONTROL MEASURES 12
STEP #3: ON-LAND INTERCEPTION CONTROL MEASURES 12
STEP #4: CONTROL MEASURES THAT INTERCEPT TRASH IN THE MS4 13
STEP #5: CONTROL MEASURES THAT INTERCEPT TRASH IN WATERWAYS 13
STEP #6: COMPARISON TO BASELINE TRASH LOAD 13

4.0 ENHANCED TRASH CONTROL MEASURES 14

CR-2: POLYSTYRENE FOAM FOOD SERVICE WARE POLICY 15
Baseline Level of Implementation 15
Enhanced Level of Implementation 15
Percent Reduction from Enhancements 15
CR-3: PUBLIC EDUCATION AND OUTREACH PROGRAMS 16
Baseline Level of Implementation 16
Enhanced Level of Implementation 16
CR-4: REDUCTION OF TRASH FROM UNCOVERED LOADS 20
Baseline Level of Implementation 20
Enhanced Level of Implementation 20
Percent Reduction from Enhancements 20
CR-5: ANTI-LITTERING AND ILLEGAL DUMPING ENFORCEMENT ACTIVITIES 22

Baseline Level of Implementation 22
Enhanced Level of Implementation 22
Percent Reduction from Enhancements 22
QF-1: Enhanced On-Land Trash Cleanups (Volunteers and/or Municipal) 23
Baseline Level of Implementation 23
Enhanced Level of Implementation 23
Percent Reduction from Enhancements 24
QF-2: Enhanced Street Sweeping 25
Baseline Level of Implementation 25
Enhanced Level of Implementation 25
Percent Reduction from Enhancements 25
QF-4: Enhanced Storm Drain Inlet Maintenance 27
Baseline Level of Implementation 27
Enhanced Level of Implementation 27
Percent Reduction from Enhancements 27
QF-5: Full-Capture Treatment Devices 28
Baseline Level of Implementation 28
Enhanced Level of Implementation 28
Percent Reduction from Enhancements 28
QF-6: Creek/Channel/Shoreline Cleanups 34
Baseline Level of Implementation 34
Enhanced Level of Implementation 34
Percent Reduction from Enhancements 35

5.0 SUMMARY OF TRASH CONTROL MEASURE ENHANCEMENTS 36

5.1 Annual Reporting and Progress Towards Trash Load Reduction Goal(s) 39
5.2 Considerations of Uncertainties 39

6.0 IMPLEMENTATION SCHEDULE 40

7.0 REFERENCES 42

LIST OF TABLES

Table 1.1. Trash control measures for which load reduction quantification credits or formulas were developed to track progress towards trash load reduction goals.

Table 2-1: Regional Default Annual Trash Generation Rates by Land Use Category.

Table 2-2: Jurisdictional areas and effective loading areas in the City of South San Francisco by land use classes identified by ABAG (2005).

Table 2-3: Preliminary annual trash baseline load for the City of South San Francisco.

Table 4.1. Trash control measures that will be implemented by *the City of South San Francisco* to reach the 40% trash load reduction.

Table QF-2-1. Planned enhanced street sweeping program in the City of South San Francisco.

Table QF-5-1. Trash full-capture treatment devices within the jurisdictional boundaries of the City of South San Francisco that are planned for installation by July 1, 2014.

Table 5-1. Planned enhanced trash control measure implementation within the jurisdictional boundaries of the City of South San Francisco and associated trash loads reduced.

Table 6-1. Preliminary implementation schedule for enhanced trash control measures in the City of South San Francisco

LIST FIGURES

Figure 2-1: Estimated trash baseline loading rates for geographical areas in the City of South San Franciso

Figure QF-2-1: Planned enhanced street sweeping program in the City of South San Francisco

Abbreviations

BASMAA	Bay Area Stormwater Management Agencies Association
BID	Business Improvement District
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CASQA	California Stormwater Quality Association
CDS	Continuous Deflection Separator
CEQA	California Environmental Quality Act
CY	Cubic Yards
EIR	Environmental Impact Report
EPA	Environmental Protection Agency
GIS	Geographic Information System
MRP	Municipal Regional Stormwater NPDES Permit
MS4	Municipal Separate Storm Sewer System
NGO	Non-Governmental Organization
NPDES	National Pollutant Discharge Elimination System
Q	Flow
SFRWQCB	San Francisco Regional Water Quality Control Board
SWRCB	State Water Resource Control Board
TMDL	Total Maximum Daily Load
USEPA	United States Environmental Protection Agency
Water Board	San Francisco Regional Water Quality Control Board
WDR	Waste Discharge Requirements

PREFACE

This Baseline Trash Load and Short-Term Trash Load Reduction Plan (Plan) is submitted in compliance with provision C.10.a(i) and C.10.a(ii)of the Municipal Regional Stormwater NPDES Permit (MRP) for Phase I communities in the San Francisco Bay (Order R2-2009-0074). This Plan was developed using a regionally consistent format developed by the Bay Area Stormwater Management Agencies Association (BASMAA). Based on new information that becomes available during the implementation of this Short-Term Plan (e.g., revisions to baseline loading estimates or load reduction credits of quantification formulas), the City of South San Francisco may chose to amend or revise this Plan. If revisions or amendments are necessary, a revised Short-Term Plan will be submitted to the Water Board via the City of South San Francisco's annual reporting process.

1.0 INTRODUCTION

The Municipal Regional Stormwater NPDES Permit for Phase I communities in the San Francisco Bay (Order R2-2009-0074), also known as the Municipal Regional Permit (MRP), became effective on December 1, 2009. The MRP applies to 76 large, medium and small municipalities (cities, towns and counties) and flood control agencies in the San Francisco Bay Region, collectively referred to as Permittees. Provision C.10 of the MRP (Trash Load Reduction) requires Permittees to reduce trash from their Municipal Separate Storm Sewer Systems (MS4s) by 40 percent before July 1, 2014.

Required submittals to the San Francisco Bay Regional Water Quality Control Board (Water Board) by February 1, 2012 under MRP provision C.10.a (Short-Term Trash Loading Reduction Plan) include:

1. (a) Baseline trash load estimate and (b) description of the methodology used to determine the load level.
2. A description of the Trash Load Reduction Tracking Method that will be used to account for trash load reduction actions and to demonstrate progress and attainment of trash load reduction levels.
3. A **Short-Term Trash Loading Reduction Plan** that describes control measures and best management practices that will be implemented to attain a 40 percent trash load reduction from its MS4 by July 1, 2014;

This Short-Term Trash Load Reduction Plan (Short-Term Plan) is submitted by the City of South San Francisco in compliance with the portions of MRP provision C.10.a.i listed as 1a and 3 above. In compliance with 1b, BASMAA submitted a progress report on behalf of Permittees that briefly describes the methodologies used to develop trash baseline loads (BASMAA 2011a). These methods are more fully described in BASMAA (2011b, 2011c). Lastly, the *Trash Load Reduction Tracking Method Technical Report* (BASMAA 2011d) was submitted by BASMAA on behalf of Permittees in compliance with submittal 2 described above. The Baseline Loading Rates and Tracking Method projects are briefly described below.

Baseline Trash Generation Rates Project

Through approval of a BASMAA regional project, Permittees agreed to work collaboratively to develop a regionally consistent method to establish baseline trash loads from their MS4s. The project, also known as the *BASMAA Baseline Trash Generation Rates Project* assists Permittees in establishing a baseline to demonstrate progress towards MRP trash load reduction goals (i.e., 40 percent). The intent of the project was to provide a scientifically-sound method for developing (default) baseline trash generation rates that can be adjusted, based on Permittee/site specific conditions; and used to develop baseline loading rates and loads. Baseline loads form the reference point for comparing trash load reductions achieved through control measure implementation.

Baseline trash loading rates are quantified on a volume per unit area basis and based on factors that significantly affect trash generation (e.g., land use, population density, and economic profile). The method used to the establish baseline trash loads for each Permittee builds off "lessons learned" from previous trash loading studies conducted in urban areas (Allison and Chiew 1995; Allison et al. 1998; Armitage et al. 1998; Armitage and Rooseboom 2000; Lippner et al. 2001; Armitage 2003; Kim et al. 2004; County of Los Angeles 2002, 2004a, 2004b; Armitage 2007). The method is based off a conceptual model developed as an outgrowth of these studies (BASMAA 2011b). Baseline trash loading rates were developed through the quantification and characterization of trash captured in Water Board recognized

full-capture treatment devices installed in the San Francisco Bay area. Methods used to develop trash baseline loading rates are more fully described in BASMAA (2011b, 2011c, and 2012).

Trash Load Reduction Tracking Method Summary

The trash load reduction tracking method, described in the *Trash Load Reduction Tracking Method Technical Report,* assists Permittees in demonstrating progress towards reaching trash load reduction goals defined in the MRP (e.g., 40 percent). The tracking method is based on information gained through an extensive literature review and Permittee experiences in implementing stormwater control measures in the San Francisco Bay Area. The literature review was conducted to evaluate quantification methods used by other agencies to assess control measure effectiveness or progress towards quantitative goals. Results are documented in the *Trash Load Reduction Tracking Method: Technical Memorandum # 1 – Literature Review* (BASMAA 2011d).

Methods attributable to specific trash control measures fall into two categories: 1) trash load reduction quantification formulas; and 2) load reduction credits (BASMAA 2011e). Quantification formulas were developed for those trash control measures that were deemed feasible and practical to quantify load reductions at this time. Load reduction credits were developed for all other control measures included in the methodology development. Both categories of methods assume that as new or enhanced trash control measures are implemented by Permittees, a commensurate trash load reduction will occur. Progress towards load reduction goals will be demonstrated through comparisons to established trash baseline load estimates developed through the BASMAA *Baseline Generation Rates Project*.

Short-Term Trash Load Reduction Plan

The purpose of this Short-Term Plan is to describe the current level of implementation of control measures and best management practices, and identify the type and extent to which new or enhanced control measures and best management practices will be implemented to attain a 40 percent trash load reduction from their MS4 by July 1, 2014. The Short-Term Plan was developed using a template created by BASMAA through a regional project. New and enhanced trash control measures (i.e., Best Management Practices) that Permittees may implement to demonstrate trash load reduction goals are included in Table 1.1. This list was developed collaboratively through the BASMAA Trash Committee, which included participation from Permittee, stormwater program, Water Board and non-governmental organization (NGO) staff. The list of control measures is based on: 1) the potential for Permittees to implement; 2) the availability of information required to populate formulas and develop credits; and 3) the expected benefit of implementation. Load reductions associated with each control measure are demonstrated either through a quantification formula (QF) or credits (CR) described in the *Trash Load Reduction Tracking Method Technical Report* (BASMAA 2011e).

In efforts to reduce trash discharged from MS4s, Permittees may choose to implement control measures that are not included in Table 1.1 or described more fully in BASMAA (2011e). If a Permittee chooses to do so, methods specific to calculating trash load reductions for that control measure would need to be developed. Additionally, at that point, consideration should be given to updating this Short-Term Plan.

Additionally, based on new information that becomes available during the implementation of this Short-Term Plan (e.g., revisions to baseline loading estimates or load reduction credits of quantification formulas); the City of South San Francisco may amend or revise this Plan. If revisions or amendments are

necessary, a revised Short-Term Plan will be submitted to the Water Board via the City of South San Francisco's annual reporting process.

Table 1.1. Trash control measures for which load reduction quantification credits or formulas were developed to track progress towards trash load reduction goals.

Load Reduction Credits
Single-use Carryout Plastic Bag Ordinances
Polystyrene Foam Food Service Ware Ordinances
Public Education and Outreach Programs
Activities to Reduce Trash from Uncovered Loads
Anti-Littering and Illegal Dumping Enforcement Activities
Improved Trash Bin/Container Management Activities
Single-Use Food and Beverage Ware Ordinances
Quantification Formulas
On-land Trash Pickup (Volunteer and/or Municipal)
Enhanced Street Sweeping
Partial-Capture Treatment Devices
Enhanced Storm Drain Inlet Maintenance
Full-Capture Treatment Devices
Creek/Channel/Shoreline Cleanups (Volunteer and/or Municipal)

This Short-Term Plan is organized into the following sections:

- Introduction;
- Trash Baseline Load Estimate;
- Load Reduction Calculation Process
- Planned Implementation of New or Enhanced Control Measures;
- Implementation Schedule; and
- References

2.0 BASELINE TRASH LOADING ESTIMATE

Note: *Tables and information presented in this section are subject to change based on the results of a third monitoring event of the BASMAA Baseline Trash Generation Rates Project. Therefore, this section of the Short-Term Plan may be updated with revised trash generation rates, baseline loading rates, and baseline loads.*

This section provides the estimated annual trash baseline load from the City of South San Francisco's Municipal Separate Storm Sewer System (MS4). In compliance with Provision C.10.a.ii of the MRP, the City of South San Francisco worked collaboratively with other MRP Permittees through BASMAA to develop data and the process necessary to establish baseline trash loading estimate from our MS4. The collaborative project was managed through the BASMAA Trash Committee and included a series of steps described in BASMAA (2012) and listed below. The approach was intended to be cost-effective and consistent, but still provide an adequate level of confidence in trash loads from MS4s, while acknowledging that uncertainty in trash loads still exists. The approach entailed the following steps:

1. Conduct literature review;
2. Develop conceptual model;
3. Develop and implement sampling and analysis plan;
4. Test conceptual model;
5. Develop and apply default trash **generation rates** to Permittee effective loading areas;
6. Adjust default trash generation rates based on baseline levels of control measure implementation by the Permittee to develop trash **baseline loading rates**; and,
7. Calculate Permittee-specific annual trash **baseline load**.

Through the collaborative BASMAA project, default baseline trash generation rates (volume per area) were developed for a finite set of categories, based on factors that significantly affect trash loads (e.g., land use). These trash generation rates were then applied to effective loading areas in applicable jurisdictional areas within the City of South San Francisco. Trash generation rates were then adjusted based on baseline street sweeping, storm drain inlet maintenance, and stormwater pump station maintenance conducted in each applicable area. The sum of the trash loads (i.e., rate multiplied by area) from each effective loading area represents the City of South San Francisco's baseline trash load from its MS4. A full description of the methods by which trash baseline loads were developed is included in BASMAA (2012a) and is summarized below.

Permittee Characteristics

Incorporated in 1908, the City of South San Francisco covers 6,115 acres in Santa Mateo County, and has a jurisdictional area of 4,866 acres. According to the 2010 Census, it has a population of 63,632, with a population density of 2,109.9 people per square mile, and average household size of 3.01. Of the 63,632 who call the City of South San Francisco home, 21.7% are under the age of 18, 8.9% are between 18 and 24, 29.3% are between 25 and 44, 27.0% are between 45 and 65, and 27.0% are 65 or older.

Top employers in the City of South San Francisco include Genetech, Amgen, Costco, Royal Laundry and Bimbo Bakeries. The median household income was $61,764 in 2000[1].

[1] From the 2000 Census. The median household income for the City of South San Francisco from the 2010 Census is not currently available.

Default Trash Generation Rates (Regional Approach)

A set of default trash generation rates was developed via the BASMAA regional collaborative project (BASMAA 2012a). Default generation rates were developed based on a comparison between trash characterization monitoring results, land uses, economic profiles, and other factors that were believed to possibly affect trash generation. Three trash characterization monitoring events were scheduled via the *Trash Generation Rates Project*. Due to the compliance timeline in the MRP, only two of three trash characterization monitoring events were used to develop trash generation rates described in BASMAA (2012a) and presented in this section. Following the completion of the third characterization event (Winter 2011/12), this section of the Short-Term Plan may be updated to reflect the most up-to-date trash generation and loading rates available. Trash generation rates based on the results of two of the three characterization events are shown in Table 2-1 for each trash loading category.

Table 2-1: Regional Default Annual Trash Generation Rates by Land Use Category.

Land Use Category	Generation Rates (Gallons/Acre)
Retail and Wholesale	29.99
High Density Residential	17.04
K-12 Schools	13.14
Commercial and Services/ Heavy, Light and Other Industrial	7.08
Urban Parks	2.14
Low Density Residential	1.25
Rural Residential	0.17

Jurisdictional and Effective Loading Areas

Default trash baseline generation rates presented in Table 2-1 were applied to effective loading areas with **jurisdictional areas** within the City of South San Francisco. The City of South San Francisco's jurisdictional areas includes all urban land areas within the City of South San Francisco boundaries that are subject to the requirements in the MRP. Land use areas identified by a combination of the ABAG 2005 land use dataset and Permittee knowledge that were not included within the City's jurisdictional areas include:

- Federal and State of California Facilities and Roads (e.g., Interstates, State Highways, Military Bases, Prisons);
- Roads Owned and Maintained by Santa Mateo County;
- Colleges and Universities (Private or Public);
- Non-urban Land Uses (e.g., agriculture, forest, rangeland, open space, wetlands, water);
- Communication or Power Facilities (e.g., PG & E Substations);
- Water and Wastewater Treatment Facilities; and
- Other Transportation Facilities (e.g., airports, railroads, and maritime shipping ports).

Once the City of South San Francisco's jurisdictional area was delineated, an effective trash loading area was developed by creating a 200-foot buffer on each side of the streets within the City's jurisdictional area. The purpose of the effective loading area is to eliminate land areas not directly contributing trash to the City's MS4 (e.g., large backyards and rooftops). Both the jurisdictional and the effective loading areas for the City of South San Francisco are presented in Table 2-2.

Table 2-2: Jurisdictional areas and effective loading areas in the City of South San Francisco by land use classes identified by ABAG (2005).

Land Use Category	Jurisdictional Area (Acres)	Effective Loading Area (Acres)	% of Effective Loading Area
High Density Residential	1,211	1,166	30
Low Density Residential	1,339	1,301	34
Rural Residential	6	5	0
Commercial and Services/ Heavy, Light and Other Industrial	1,792	1,048	27
Retail and Wholesale	229	164	4
K-12 Schools	219	102	3
Urban Parks	69	40	1
TOTAL	4,866	3,828	**100%**

Permittee-Specific Baseline Trash Loading Rates

Regional default trash generation rates developed through the BASMAA regional collaborative project were applied to effective loading areas within the City of South San Francisco based on identified land uses. These generation rates were then adjusted based on the calculated effectiveness of baseline street sweeping, storm drain inlet maintenance and pump station maintenance implemented by the City. These adjustments were conducted in GIS due to the site specificity of baseline generation rates and baseline control measure implementation. The following sections describe the baseline level of implementation for these three control measures. A summary of trash baseline generation and loading rates for the City of South San Francisco are provided in Table 2-3 and areas associated with these rates are illustrated in Figure 2-1.

Baseline Street Sweeping

A "baseline" street sweeping program is defined as the sweeping frequency and parking enforcement implemented by the City of South San Francisco prior to effective date of the MRP. Baseline street sweeping differs from "enhanced" street sweeping, which includes increased parking enforcement and/or sweeping conducted at a frequency greater than baseline ceiling (i.e., once per week for retail land uses and twice per month for all other land uses). The baseline ceiling was created to not penalize implementers of enhanced street sweeping programs prior to the effective date of the MRP. For those Permittees that sweep less frequent than the baseline ceiling, their current sweeping frequency serves as their baseline.

The City of South San Francisco's baseline street sweeping program includes sweeping streets in residential areas twice per month, and streets in retail areas and the downtown area once per week. The City's current street sweeping program includes sweeping most streets in residential, industrial, and commercial areas once every two weeks. The downtown area and surrounding neighborhoods, including El Camino Real are swept once per week.

The posting of parking enforcement signs for street sweeping occurs within some residential and commercial areas located between El Camino Real and US 101, and on several major arterial roads. Parking enforcement equivalent occurs on many arterial roads within the City. The estimated trash load reduced via baseline street sweeping is presented in Table 2-3.

Baseline Storm Drain Inlet Maintenance

Within the City, storm drain inlets were cleaned at a baseline level of one time per year prior to the effective date of the MRP. Based on this baseline frequency and the effectiveness rating developed in BASMAA (2012b), the baseline storm drain maintenance program in the City of South San Francisco has an annual effectiveness rating of 5%. The estimated trash load reduced via baseline storm drain inlet maintenance is presented in Table 2-3.

Baseline Stormwater Pump Station Maintenance

The City of South San Francisco owns and maintains nine stormwater pump stations. Of these stations, three have trash racks that capture trash and allow for removal during maintenance. For those pump stations with trash racks, the estimated volume of trash removed annually from each pump station prior to the effective date of the MRP is considered the baseline level of implementation. To determine the baseline volume of trash removed from pump stations, an effectiveness rating of 25% removal of the baseline trash load attributable to the area draining to the pump station is assumed. This effectiveness rating is based on methods developed in BASMAA (2012b). The estimated trash load reduced via baseline pump station maintenance is presented in Table 2-3.

Baseline Trash Loading Estimate

The estimated baseline trash load from the City of South San Francisco was calculated as the sum of the loads from the City's effective loading area, adjusted for baseline implementation of street sweeping, storm drain inlet maintenance, and pump station maintenance. The preliminary annual trash baseline load for the City of South San Francisco is presented in Table 2-3. Preliminary baseline trash loading rates are presented in Figure 2-1 to provide a geographical illustration of areas with estimated low, moderate, high and very high trash loading rates.

Table 2-3: Preliminary annual trash baseline load for the City of South San Francisco.

Category	Annual Load (gallons)
Preliminary Generation Trash Load	35,267
Load Removed via Baseline Street Sweeping	13,551
Load Removed via Baseline Storm Drain Inlet Maintenance	1,086
Load Removed via Baseline Stormwater Pump Station Maintenance	98
Preliminary Trash Baseline Load	**20,533**

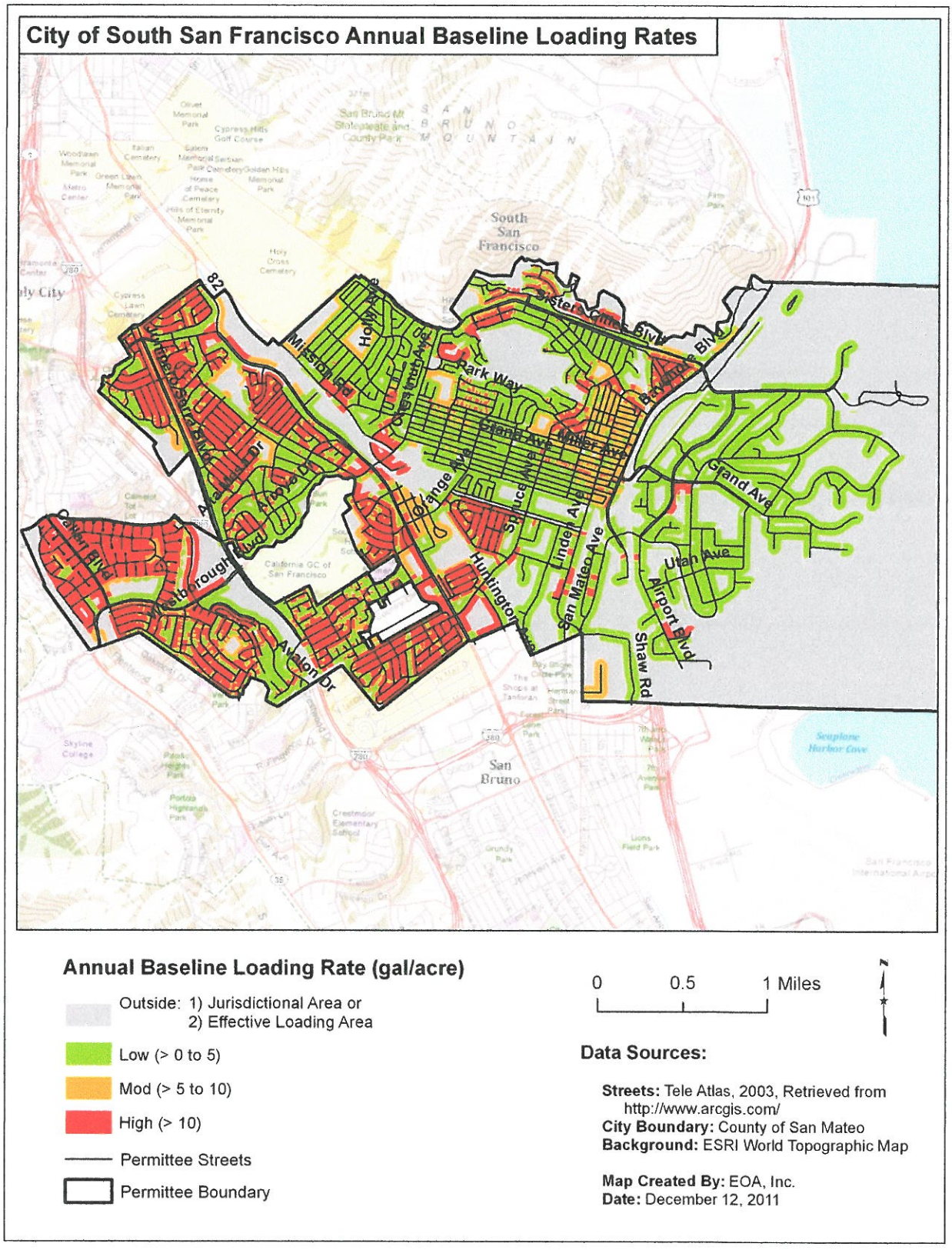

Figure 2-1: Estimated trash baseline loading rates for geographical areas in the City of South San Francisco.

3.0 LOAD REDUCTION CALCULATION PROCESS

Using the guiding principles and assumptions described by BASMAA (2011e), a stepwise process for calculating trash load reductions was developed collaboratively through BASMAA. This process is fully described in Trash Load Reduction Tracking Method Technical Report (BASMAA 2011e) and is briefly summarized in this section. The process takes into account at what point in the trash generation and transport process a trash control measure: 1) prevents trash generation, 2) intercepts trash in the environment prior to reaching a water body, or 3) removes trash that has reached a water body. In doing so, it avoids double-counting of trash load reductions associated with specific control measures.

To demonstrate trash load reductions, baseline trash loading rates will be adjusted using the following process:

Step #1: Existing Enhanced Street Sweeping
Step#2: Trash Generation Reduction
Step #3: On-land Interception
Step #4: Trash Interception in the Stormwater Conveyance System
Step #5: Trash Interception in Waterways
Step #6: Comparison to Baseline Trash Load

Reductions calculated in Steps 2 and 5 are assumed to be implemented at a constant rate on an "area-wide" basis. For example, if a new region-wide public education strategy is implemented within the San Francisco Bay area, all Permittees can apply load reduction credits associated with this control measure. In contrast, Steps 1, 3 and 4 are "area-specific" reductions that only apply to specific areas within a Permittee's jurisdiction. Area-specific control measures include full-capture treatment devices and enhanced street sweeping. Area-specific reductions may require the use of a Geographic Information System (GIS) to calculate.

Reductions are generally applied in the sequence described below, although some reductions may be applied "in-parallel" and calculated during the same sub-step in the process.

Step #1: Existing Enhanced Street Sweeping

Trash load reductions due to existing enhanced street sweeping implemented prior to the effective date of the MRP and conducted at levels above baseline levels are not incorporated into each Permittee's trash baseline load. Therefore, load reductions associated with existing enhanced are accounted for first in the trash load reduction calculation process. Existing enhanced street sweeping includes street sweeping conducted at a frequency greater than **1x/week** for streets within retail land use areas or greater than **2x/month** for streets in all other land use areas. The result of adjustments made to trash baseline loads due to the implementation of existing enhanced street sweeping is a set of **current baseline loading rates** and a **current baseline load**.

Step #2: Trash Generation Reduction Control Measures

Trash generation reduction control measures prevent or greatly reduce the likelihood of trash from being deposited onto the urban landscape. They include the following area-wide control measures:

CR-1: Single-Use Carryout Plastic Bag Ordinances

CR-2: Polystyrene Foam Food Service Ware Ordinances

CR-3: Public Education and Outreach Programs

CR-4: Reduction of Trash from Uncovered Loads

CR-5: Anti-Littering and Illegal Dumping Enforcement

CR-6: Improved Trash Bin/Container Management

CR-7: Single-Use Food and Beverage Ware Ordinances

Load reductions associated with trash generation reduction control measures are applied on an area-wide basis.[4] Therefore, reductions in current baseline loading rates are adjusted uniformly based on the implementation of the control measure and the associated credit claimed.

Baseline loading rate adjustments for all generation reduction control measures implemented may be applied in-parallel, but should be applied prior to calculating on-land interception measures discussed in Step #3. The result of adjustments to trash baseline loading rates due to the implementation of these enhanced control measures will be a set of **street loading rates**. The **street load** is the volume of trash estimated to enter the environment and available for transport to the MS4 if not intercepted via on-land control measures described in Step #3.

Step #3: On-land Interception Control Measures

Once trash enters the environment, it may be intercepted and removed through the following control measures prior to reaching the stormwater conveyance system:

QF-1: On-land Trash Cleanups (Volunteer and/or Municipal) (Area-wide)

QF-2: Enhanced Street Sweeping (Area-specific)

Since on-land trash cleanups can affect the amount of trash available to street sweepers, load reductions associated with their implementation will be quantified first, followed by street sweeping enhancements. On-land trash cleanups will be applied as an area-wide reduction and all effective loading rates will be adjusted equally. Enhanced street sweeping, however, is an area-specific control measure and only those effective loading rates associated with areas receiving enhancements will be adjusted. Due to the spatial nature of enhanced street sweeping, GIS may be needed to conduct this step.

The result of adjustments to effective loading rates due to the implementation of these enhanced control measures will be a set of **conveyance system loading rates**. The **conveyance load** is the volume of trash estimated to enter the stormwater conveyance system (e.g., storm drains).

[4] The only exception to this statement are load reductions associated with the establishment of Business Improvement Districts (BIDs) or equivalent, which are specific to geographic areas and considered "area-specific".

Step #4: Control Measures that Intercept Trash in the MS4

Control measures that intercept trash in the stormwater conveyance system are area-specific. Therefore, they only apply to land areas and associated trash loads reduced. Conveyance system loading rates developed as a result of Step #3 should be adjusted in-parallel for the following control measures:

- QF-3a: Partial-capture Treatment Device: Curb Inlet Screens (Area-specific)
- QF-3b: Partial-capture Treatment Device: Stormwater Pump Station Trash Racks Enhancements (Area-specific)
- QF-4: Enhanced Storm Drain Inlet Maintenance (Area-specific)
- QF-5: Full-Capture Treatment Devices (Area-specific)

Load reductions for these control measures are calculated in-parallel because they are applied to independent geographical areas. Reductions from all control measures described in this step are area-specific and may require the use of GIS to calculate a set of **waterway loading rates**. Once waterway loading rates have been determined, a **waterway load** will be developed and used as a starting point for calculating load reductions associated with trash interception in waterways discussed in Step #5.

Step #5: Control Measures that Intercept Trash in Waterways

The load of trash that passes through the stormwater conveyance system without being intercepted may still be removed through interception in waterways. There are two control measures associated with interception in waterways:

- QF-3c: Partial-capture Treatment Device: Litter Booms/Curtains (Area-wide)
- QF-7: Creek/Channel/Shoreline Cleanups (Volunteer and/or Municipal) (Area-wide)

As these control measures are implemented, load reduction estimates can be calculated in-parallel for these two measures.

Step #6: Comparison to Baseline Trash Load

Applying the five steps described in the processes above will provide an estimated trash load (volume) remaining after trash control measures are implemented. As depicted in the following equation, the relative percent difference between the baseline load and the load remaining after control measures are implemented is the percent reduction that will be used to assess progress towards MRP trash load reduction goals.

$$\frac{\text{Baseline Load} - \text{Remaining Load}}{\text{Baseline Load}} \cdot 100 = \% \text{ Reduction}$$

4.0 ENHANCED TRASH CONTROL MEASURES

This section describes the new or enhanced trash control measures planned for implementation by the **City of South San Francisco.** The enhanced control measures described are designed to reach a 40% reduction by July 1, 2014. New and enhanced control measures that will be implemented by **City of South San Francisco** include those listed in Table 4.1.

Table 4.1. Trash control measures that will be implemented by the City of South San Francisco to reach the 40% trash load reduction.

Control Measure
Polystyrene Foam Food Service Ware Ordinances
Public Education and Outreach Programs
Activities to Reduce Trash from Uncovered Loads
Anti-Littering and Illegal Dumping Enforcement Activities
On-land Trash Pickup (Volunteer and/or Municipal)
Enhanced Street Sweeping
Enhanced Storm Drain Inlet Maintenance
Full-Capture Treatment Devices
Creek/Channel/Shoreline Cleanups (Volunteer and/or Municipal)

CR-2: Polystyrene Foam Food Service Ware Policy

Polystyrene foam is used as food ware in the food service industry. According to the USEPA, floatable debris in waterways, such as products made of polystyrene, is persistent in the environment and has physical properties that can have serious impacts on human health, wildlife, the aquatic environment and the economy (USEPA 2002). Due to its properties, polystyrene foam used as food ware is typically not recycled. Since 1990, over 100 government agencies within the United States, including over twenty within the Bay area have enacted full or partial bans on polystyrene foam food service ware.

Baseline Level of Implementation

Prior to adoption of the MRP, over twenty agencies within the Bay area enacted full or partial bans on polystyrene foam food service ware. To avoid penalizing these early implementers, an applicable control measure implemented by a Permittee prior to the effective date of the MRP will be credited equally to a control measure implemented after the effective date. Therefore, the baseline level of implementation is not applicable for this control measure.

Enhanced Level of Implementation

City of South San Francisco adopted an ordinance banning polystyrene foam food service ware on August 27, 2008. Ordinance 1398-2008 prohibits the distribution of polystyrene foam single-use food and beverage ware at Permittee-sponsored events or on Permittee-owned property and prohibits the distribution of polystyrene foam single-use food and beverage ware at all food service vendors. The ordinance became effective on October 1, 2008. The percent trash reduction from MS4s as a result of implementing a polystyrene foam food service ware ordinance will be reported in the Annual Report submitted each September.

The ordinance is enforced by Code Enforcement when they perform annual inspections of food service vendors and is also noted on inspection forms when Environmental Compliance Inspectors perform food service establishment inspections.

Public outreach was achieved through public meetings, meetings with the Chamber of Commerce, providing information in the City's newsletter, posting information on the City website and distributing an informational flyer.

Percent Reduction from Enhancements

The City of South San Francisco will receive an **8 percent** reduction credit for implementing specific enhanced control measures described in Enhanced Level of Implementation section above. The **8 percent** reduction credit will be applied to the City of South San Francisco's baseline trash load. This percent reduction credit is consistent with methods presented in the BASMAA (2012a). A summary of all load reductions anticipated through the implementation of this plan are included in Section 5.

CR-3: Public Education and Outreach Programs

Permittees in the San Francisco Bay Area have implemented public education and outreach programs to inform residents about stormwater issues relating to pollutants of concern, watershed awareness and pollution prevention. Public education and outreach efforts include developing and distributing brochures and other print media; posting messages on websites and social networking media (Facebook, Twitter etc.), attending community outreach events, and conducting media advertising. In recent years, some municipal agencies have implemented anti-litter campaigns to increase public awareness about the impacts of litter on their communities and water quality; and to encourage the public to stop littering.

Baseline Level of Implementation

The City of South San Francisco implemented the following public education and outreach control measures prior to the effective date of the MRP.

- Day in the Park is a Community Fair, where outreach items were distributed. The focus of this event was Stormwater and Pollution Prevention.
- Citizens Academy in May provided Pollution Prevention Information.

These control measures are considered baseline because they were either not related to trash reduction specifically, or they are not planned to be continued during the term of the MRP. New actions or actions started prior to the effective date of the MRP and continued into the future are described under the next section.

Enhanced Level of Implementation

The City of South San Francisco will implement the following public education and outreach control measures prior to July 1, 2014:

Litter Reduction Advertising Campaign(s)

BASMAA Youth Outreach Campaign (Regional)

Through participation and funding of the regional **BASMAA Youth Outreach Campaign** the City of South San Francisco will implement an outreach campaign designed to reduce littering from the target audience in the Bay Area. The Youth Outreach Campaign was launched in September 2011 (post-MRP effective date) and aims to increase the awareness of Bay Area Youth (ages 16-24) on litter and stormwater pollution issues, and eventually change their littering behaviors. Combining the ideas of Community Based Social Marketing with traditional advertising, the Youth Campaign aims to engage youth to enable the peer-to-peer distribution of Campaign messages. The Campaign will at least run from FY 11-12 through FY 13-14. A brief description of the Campaign activities is provided below:

- Raising Awareness: The Campaign will begin by raising awareness of the target audience on litter and stormwater pollution issues. Partnerships with youth commissions, high schools and other youth focused organizations will be developed to reach the target audience. Messages targeted to youth will be created and distributed via paid advertising, email marketing, Campaign website and social networking sites (e.g. Facebook and twitter).

- Engage the Youth: The advertisements will encourage the audience to participate in the Youth Campaign by joining a Facebook page, entering a contest, taking an online quiz, etc., and providing their contact information. At the beginning of FY 12-13, a video contest will be launched to get Bay Area youth further involved in the Campaign. An online voting system will be used to select the winning entry. Media advertising will be conducted to promote the winning entry.
- Change Behaviors: To move the audience along the behavior change continuum, the Campaign will use electronic platforms such as email marketing and social networking sites to encourage participants to engage in increasingly more difficult behavior changes, such as participating in a clean-up, organizing a clean-up, etc.
- Maintain Engagement: The Campaign will continue to interact with the target audience through email marketing and social media websites.

The Youth Campaign will include a pre and post campaign survey to evaluate the effectiveness of outreach. The pre-campaign survey will be conducted in FY 11-12 and the post campaign survey in FY 13-14. Other evaluation mechanisms, such as website hits, number of youth engaged in the Campaign's social networking website, etc. will also be used to evaluate its effectiveness in increasing awareness and changing behavior.

Outreach to School-age Children or Youth

Countywide Programs

Through participation and funding of the San Mateo Countywide Water Pollution Prevention Program (SMCWPPP), the City of South San Francisco, plans to continue to implement litter reduction outreach to school-age children and youth. SMCWPPP currently oversees two contracts to provide direct outreach to grades K-12 in a school setting on behalf of all permittees. The contract for grades K-5 is currently held by the Banana Slug String Band, which performs a presentation called "We All Live Downstream." Through songs and interactive exercises, the message of not putting anything in the stormdrains (including trash) is delivered, along with basic concepts of the water cycle and the impact of pollution on aquatic life. The second contract is held by Rock Steady Science, which presents "Water Pollution Prevention and Your Car" to high school students. A portion of this presentation is dedicated to watershed and stormdrain education, and the impact of litter on local creeks and waterways. Both contracts are managed to ensure that schools in each community in the County are reached. For communities without High Schools, the feeder schools in neighboring communities are specifically targeted for presentations. In addition to outreach at the school sites, a number of student activity guides and coloring books related to watershed health and littering are provided to children who attend outreach events. Schools are also directly targeted in promotion of Coastal Cleanup Day.

In addition to the programs described above, *Recycleworks*, a branch of San Mateo County Public Works dedicated to promotion of recycling solid waste, plans to continue to conduct litter reduction activities. These include participating in the green schools program in which a school gets certified by achieving goals set from a menu of categories, one of which is litter reduction. In addition, *Recycleworks* conducts school assemblies and field trips focusing on litter reduction and recycling. They also conduct waste audits at schools to encourage waste reduction, and staff outreach events at schools. PIP is exploring the possibility of teaming up with *Recycleworks*

to continue outreach to junior high and high school students after June 2012, when the current contract with Rock Steady Science expires.

Local Programs

The City of South San Francisco provides outreach to students during sewer science, which includes a pollution prevention and stormwater component, and during career days at local schools. We reach approximately 400 students during sewer science and an additional 75 students for career day.

Media Relations

BASMAA Regional Media Relations Project (Regional)

Through participation and funding of the **BASMAA Regional Media Relations Project**, the City of South San Francisco plans to continue to implement a media relations project partially designed to reduce littering from target audiences in the Bay Area. The goal of the BASMAA Media Relations Project is to generate media coverage that encourages individuals to adopt behavior changes to prevent water pollution, including littering. At least two press releases or PSAs focus on litter issues each year (e.g., creek clean-up activities, preventing litter by using reusable containers, etc.).

Coastal Cleanup Day Promotion (Countywide)

On the countywide level, SMCWPPP also conducts annual press releases for Coastal Cleanup Day, and uses Twitter to promote cleanup events. These releases are intended to gain support and assistance for cleanup events conducted each September in local water bodies.

Media Relations (Local)

The City of South San Francisco plans to use free media such as public service announcements and to place ads in local newspapers and homeowners association newsletters. The message that will be delivered is to "Stop Trash Now" by disposing of trash properly which will protect the waterways and the environment. A possible visual that will be used is a picture of a creek full of trash with the message "Stop Trash Now" across the picture and an additional message to stop littering, below the picture. The desired outcome is that people will stop littering.

Community Outreach Events

SMCWPPP, through its Public Information and Participation (PIP) program, plans to continue to conduct community outreach events on behalf of Permittees who request support. Outreach materials related to litter that are distributed include, in addition to the children's materials listed above under Outreach to School-age Children or Youth, a promotional sign for cigarette smokers to discourage cigarette litter, and pocket ashtrays are given out. A general stormwater pollution prevention flyer in English and Spanish that includes litter reduction in its messaging is distributed. In addition to table outreach events conducted for specific permittees, PIP also conducts a Countywide Event aimed to reach residents from throughout the county. PIP manages an online calendar which promotes cleanup events by non-profit organizations

throughout the county. In FY 2011, PIP completed its 6th year acting as the county coordinator for Coastal Cleanup Day, increasing volunteer participation by 400% in that time, and trash removal increased by 300%.

During the term of the MRP, new outreach materials are also being considered for dissemination to the public, including reusable shopping bags to encourage reduction in use of plastic carryout bags. In addition, spring cleanups taking place in individual jurisdictions are planned to be promoted under one theme by PIP, who will assist directing volunteers to cleanup events in their communities. SMCWPPP is planning to conduct a total of 10-12 outreach events on behalf of various jurisdictions within the county in the 2011-12 fiscal year. SMCWPPP will also continue maintaining an online calendar of cleanups on a monthly basis.

Additional Community Outreach Events (Local)

The City of South San Francisco will disseminate outreach materials during Pollution Prevention (P2) week and during the spring, summer and fall at the Farmers Market. The materials that will be distributed include reusable Chico bags, which will help to eliminate the use of single use/plastic bags, and flyers on litter pollution prevention tips.

Percent Reduction from Enhancements

The City of South San Francisco will receive a total of **8 percent** reduction credit for implementing specific enhanced control measures described in *Enhanced Level of Implementation* section above. This percent reduction is comprised of the following credits, consistent with the *Load Reduction Tracking Method*:

- Litter Reduction Advertising Campaigns – 3%
- Outreach to School-age Children or Youth – 2%
- Media Relations – 1%
- Community Outreach Events - 2%

These **8 percent** reduction credits will be applied against the City of South San Francisco's baseline trash load. This percent reduction credit is consistent with methods presented in the BASMAA (2012a). A summary of all load reductions anticipated through the implementation of this plan are included in Section 5.

CR-4: Reduction of Trash from Uncovered Loads

Although it is currently illegal to operate a vehicle that is improperly covered and which its' contents escapes[5], vehicles remain an important trash source to MS4s and local waterways. Specifically, vehicles that do not secure or cover their loads when transporting trash and debris have a high risk of contributing trash to MS4s. Land areas that generate trash from vehicles include roads, highways (on/off ramps, shoulders or median strips) and parking lots. To help address the dispersion of trash from unsecured or uncovered vehicles destined for landfills and transfer stations, Permittees may require municipally-contracted trash haulers to cover or secure loads or work with municipal or private landfill and transfer station operators to educate waste haulers on securing loads and/or to enhance enforcement of existing regulations.

Baseline Level of Implementation

The baseline trash load described in Section 2.0, assumes that prior to adoption of the MRP the City of South San Francisco has not adopted control measures to reduce trash from vehicles with uncovered loads. Therefore, implementation of any of the control measures described in this section is considered to be enhanced implementation.

Enhanced Level of Implementation

The City of South San Francisco will implement the following enhanced control measures to reduce trash from vehicles with uncovered loads prior to July 1, 2014.

- Require Municipal Trash Haulers to Cover Loads – Development and inclusion of language in a Permittee's hauling service contract(s) that requires contracted trash and construction debris haulers to cover loads when transporting trash and debris to municipally or privately-owned landfills and transfer stations. The City will work with Blue Line Transfer, the local transfer station, to implement the enhanced control measures when they receive uncovered loads at the transfer station. City building plan check comments will also include the requirement that all construction debris must be covered when hauled away from construction sites.
  The Environmental Compliance Program will also ask the Police Department to aid with enforcement by issuing tickets to vehicles with uncovered loads.

Percent Reduction from Enhancements

The City of South San Francisco will receive a **1 percent** reduction credit for implementing specific enhanced control measures described in *Description of Enhanced Level of Implementation* section above. The **1 percent** reduction credit will be applied to the baseline trash load to urban creeks from the municipal separate storm sewer system (MS4) owned and operated by the City of South San Francisco. This percent reduction credit was obtained from

[5] In accordance with the California Vehicle Code Sections 23114 and 23115, it is against the law to operate a vehicle on the highway which is improperly covered, constructed, or loaded so that any part of its contents or loads spills, drops, leaks, blows, or otherwise escapes from the vehicle. Exempted materials include hay and straw, clear water and feathers from live birds. Additionally, any vehicle transporting garbage, trash, or rubbish, used cans or bottles, waste papers, waste cardboard, etc. must have the load covered to prevent any part of the load from spilling on the highway (CVC 2011). Significant fines are possible for non-compliance.

the *Trash Load Reduction Tracking Method Report* (BASMAA 2012a) and is presented in the Trash Load Reduction Summary Table included in Section 5.

CR-5: Anti-Littering and Illegal Dumping Enforcement Activities

Successful anti-littering and illegal dumping enforcement activities include laws or ordinances that make littering or dumping of trash illegal. Laws are enforced by various municipal agency staff (e.g., police, sheriff and public works department staff) who issue citations in response to citizen complaints or other enforcement methods (e.g., surveillance cameras, signage and/or physical barriers installed at illegal dumping hot spots). In some California jurisdictions, the minimum fine for littering is $500 and the maximum penalty for highway littering is $1000 (City of San Francisco 2001). However, it is difficult to enforce small littering events unless they are witnessed or solid proof exists linking the offender to the litter. As a result, enforcement tends to focus on larger scale illegal dumping activities.

Baseline Level of Implementation

The baseline trash load described in Section 2.0, assumes that the City of South San Francisco has adopted a basic anti-littering and illegal dumping enforcement program that entails receiving and responding to complaints from citizens as resources allow. Police issue tickets for littering when it is observed.

Enhanced Level of Implementation

The City of South San Francisco has implemented the following enhanced anti-littering and illegal dumping enforcement control measures prior to July 1, 2014.

> The City will continue to post the stormwater hotline number on the City's website and include information that this number can also be used to report illegal dumping and littering. Enhanced implementation will include enforcement by Code Enforcement and Environmental Compliance through Notices of Violation and Administrative Citations. In ongoing situations, personal surveillance and the use of cameras for surveillance might be implemented. Evidence will be collected if possible (e.g., names, addresses, etc.) from illegal dump sites (i.e., public and private) in an attempt to identify offenders.

Percent Reduction from Enhancements

The City of South San Francisco will receive a **2 percent** reduction credit for implementing specific enhanced control measures described in *Description of Enhanced Level of Implementation* section above. The **2 percent** reduction credit will be applied to the baseline trash load to urban creeks from the municipal separate storm sewer system (MS4) owned and operated by the City of South San Francisco. This percent reduction credit was obtained from the *Trash Load Reduction Tracking Method Report* (BASMAA 2012a) and is presented in the Trash Load Reduction Summary Table included in Section 5.

QF-1: Enhanced On-Land Trash Cleanups (Volunteers and/or Municipal)

On-land cleanups conducted by Permittees and volunteers have been successful in removing trash from identified trash hot spots and engaging local citizenry in improving their communities. Permittees have several programs in place to address on-land trash. Municipal efforts relate to ongoing beautification of impacted areas and coordination of cleanup events. Volunteer on-land cleanups involve the meeting of individuals, creek and watershed groups, civic organizations, businesses and others at designated or adopted on-land sites to remove trash. On-land trash cleanups are conducted as single-day or throughout the year.

Baseline Level of Implementation

The City of South San Francisco did not implement any on-land cleanup activities prior to the effective date of the MRP. New actions that began or are planned to begin after to the effective date of the MRP are described under the next section.

Enhanced Level of Implementation

Prior to July 1, 2014, the City of South San Francisco will be conducting or coordinating the following new or enhanced on-land trash cleanup activities listed below. These on-land cleanups will be conducted or coordinated each year and the volume of trash removed will be tracked to demonstrate trash loads reduced.

Please note that **only trash that has the potential of entering the MS4 will be tracked**. As a result, large items (e.g., appliances, shopping carts, furniture, mattresses, televisions, tires, lumber, etc.) that will be removed during on-land trash cleanups are not part of the volume determination since they do not have the potential of entering the MS4.

The City of South San Francisco will implement the following on-land cleanup activities to remove an estimated 800 gallons of trash from the environment.
The City of South San Francisco will perform routine or regularly scheduled litter pickup and removal. When dump sites are identified, City staff will coordinate a clean-up of the dump site through the Public Works Department. The City of South San Francisco will work with the San Mateo County Community Care Program, formerly known as the Weekend Work Program, to coordinate on-land cleanups of various locations within the City.

The City of South San Francisco will work with volunteer groups to perform an on-land cleanup for Earth Day as part of Keep America Beautiful. We will also work with local high school environmental clubs to perform on-land cleanups. The Environmental Compliance Inspectors will meet with the Chamber of Commerce to encourage business owners to collect litter in the vicinity of their businesses. The City of South San Frnacisco will also routinely clean selected hotspots.
The 800 gallon estimate was based on previous creek cleanup volumes and a conservative estimate of how much trash could be collected during 3-4 on-land trash cleanups.

Percent Reduction from Enhancements

The total estimated annual volume of trash that will be reduced beginning July 1, 2014 as a result of implementing on-land trash cleanups is **800 gallons.** This volume is equal to approximately a **3.9 percent** reduction in the baseline trash load to urban creeks from the municipal separate storm sewer system (MS4) owned and operated by the City of South San Francisco. Both values provided within this section are included in Trash Load Reduction Summary Table included in Section 5.

QF-2: Enhanced Street Sweeping

Street sweeping is conducted by most, if not all, Bay Area municipalities to remove trash and debris that collect in the gutters at the edge of streets. Parked cars and large storms that produce significant runoff can impact the effectiveness of street sweepers. However, increasing parking enforcement or more frequent street sweeping (as compared to the frequency of storm events) may increase the trash load reduced to MS4s. Permittees who choose to enhance street sweeping may do so to demonstrate trash load reductions to their MS4s and progress towards trash load reduction goals required by the MRP.

Baseline Level of Implementation

The baseline trash load described in Section 2.0 incorporates the trash load reductions due to baseline street sweeping. The City of South San Francisco's baseline street sweeping program includes sweeping streets in residential areas twice per month, and streets in the downtown and retail areas once per week. The posting of parking enforcement signs for street sweeping occurs within a section of residential and commercial development located between El Camino Real and US 101, and on several major arterial roads. Parking enforcement equivalent occurs on many arterial roads within the City. The estimated trash load reduced via baseline street sweeping is presented in Table 2-3.

Enhanced Level of Implementation

The City current sweeps at an "existing enhanced" frequency and plans to further enhance its current street sweeping program by increasing the frequency of sweeping and increasing parking enforcement on certain high priority street segments. Planned enhancements are illustrated in Figure QF-2-1 and include increasing sweeping of streets in residential, industrial, and commercial areas to once per week. The downtown and surrounding neighborhoods, including El Camino Real are currently swept once per week.

Percent Reduction from Enhancements

The total estimated annual volume of trash that is currently removed as a result of existing enhanced sweeping is **790 gallons**. The estimated volume of trash that will be reduced by will be reduced by July 1, 2014 enhanced street sweeping is **1866 gallons**. As described in Trash Load Reduction Summary Table included in Section 4, this volume is equal to approximately a **9.1 percent** reduction in the baseline trash load to urban creeks from the municipal separate storm sewer system (MS4) owned and operated by the City of South San Francisco. This load reduction is consistent with methods presented in the *Trash Load Reduction Tracking Method Report* (BASMAA 2012a) and is presented in the Trash Load Reduction Summary Table included in Section 5.

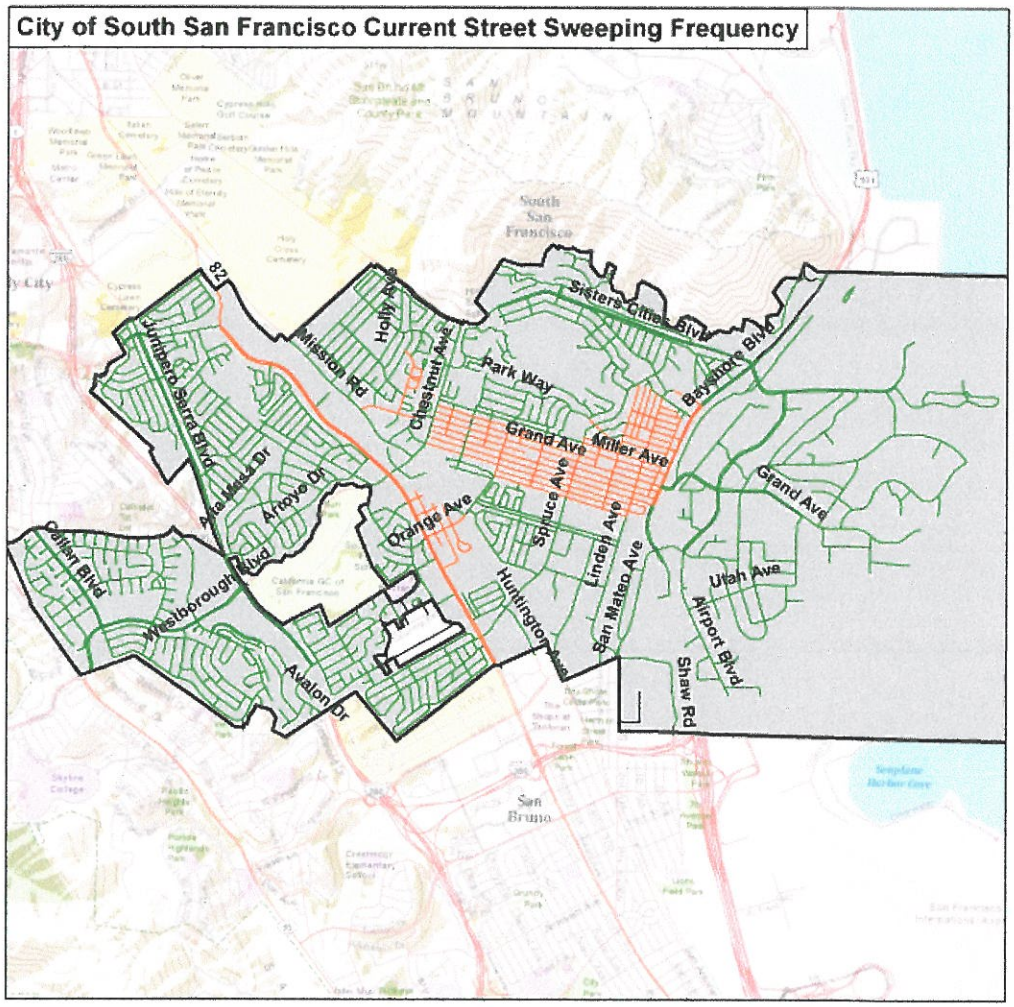

Figure QF-2-1: Planned enhanced street sweeping program in the City of South San Francisco All areas (red and green) are planned to be enhanced to a weekly sweeping frequency.

QF-4: Enhanced Storm Drain Inlet Maintenance

In accordance with countywide Stormwater Conveyance System Operation and Maintenance Performance Standards, storm drain inlets are maintained at least once per year by Permittees. Permittees who have enhanced storm drain inlet maintenance by increasing the frequency of cleanouts may use the load of trash reduced to MS4s to demonstrate attainment of trash load reduction goals required by the MRP.

Baseline Level of Implementation

The baseline trash load described in Section 2.0 assumes that the City of South San Francisco currently maintains and removes material from storm drain inlets at least once per year. This baseline frequency is consistent with the frequency of storm drain inlet maintenance in the City of South San Francisco prior to the effective date of the MRP.

Enhanced Level of Implementation

The City of South San Francisco plans to enhance the frequency of storm drain inlet cleaning to **2x/year** at a total of **970** inlets prior to July 1, 2014. Retail, commercial/industrial, and high density residential areas will be cleaned twice per year or more frequently as needed.

Percent Reduction from Enhancements

The total estimated annual volume of trash that will be reduced by July 1, 2014 as a result of implementing enhanced storm drain inlet maintenance is **69 gallons**. This volume is equal to approximately a **0.3 percent** reduction in the baseline trash load to urban creeks from the municipal separate storm sewer system (MS4) owned and operated by the City of South San Francisco. Both values provided within this section are included in Trash Load Reduction Summary Table included in Section 5. The enhanced frequency of maintenance and associated effectiveness ratings that were used to calculate loads reduced from enhanced maintenance are consistent with the trash load reduction tracking method (BASMAA 2012a).

QF-5: Full-Capture Treatment Devices

As defined by the Municipal Regional Stormwater Permit (MRP), a full-capture system or device is any single device or series of devices that traps all particles retained by a 5 mm mesh screen and has a design treatment capacity of not less than the peak flow rate (Q) resulting from a one-year, one-hour, storm in the sub-drainage area. A list of the full-capture systems and devices recognized by the San Francisco Bay Regional Water Quality Control Board (Water Board) is included in *Trash Load Reduction Tracking Method Report* (BASMAA 2011e). Trash loads reduced via publically or privately owned and operated devices within a Permittee's jurisdictional area that have been recognized by the Water Board as full-capture may be used to demonstrate attainment of trash load reduction goals.

Baseline Level of Implementation

Prior to adoption of the MRP, the City of South San Francisco had not installed full capture devices. The installation of devices was required by the City on certain types of developments. That said, *Trash Load Reduction Tracking Method* allows for applicable full capture devices that are implemented within a Permittee's jurisdictional area prior to the effective date of the MRP to be credited equally to a control measure implemented after the effective date. Therefore, the baseline level of implementation for this control measure assumes that no trash full-capture devices have been installed in the City of San Francisco and all applicable devices installed to-date are assumed to be "enhanced" measures.

Enhanced Level of Implementation

A total of **107 trash full-capture treatment devices** have been or will be installed in the City of South San Francisco prior to July 1, 2014. A list of these full-capture devices is included in Table QF-5-1. All devices listed within this table are enhanced trash control measures. Table QF-5-1 also includes the area treated and the calculated trash load reduced from each full-capture treatment device. These calculations are consistent with the approach described in the *Trash Load Reduction Tracking Method Report* (BASMAA 2012a). Additionally eight CDS units are installed on various properties throughout the City of South San Francisco. Six out of eight CDS units were installed prior to the effective date of the MRP. The other two units were installed as part of public project for a parking garage.

Percent Reduction from Enhancements

The total estimated annual volume of trash that will be reduced by July 1, 2014 as a result of implementing full capture devices is **548 gallons**. This volume is equal to approximately a **2.7 percent** reduction in the baseline trash load to urban creeks from the municipal separate storm sewer system (MS4) owned and operated by the City of South San Francisco. Both values provided within this section are included in Trash Load Reduction Summary Table included in Section 5.

Table QF-5-1. Trash full-capture treatment devices within the jurisdictional boundaries of the City of South San Francisco that are planned for installation by July 1, 2014.

Device ID	Public or Private	Device Name	Location (Cross Streets)	Installation Date/Anticipated Installation Date	Estimated Total Area Treated (acres)	Trash Load Reduced
1	Public	West Coast Storm	2401 Unwin ct	installed 10/24/11	1.62	0.59 cubic feet
2	Public	West Coast Storm	Chateau ct & Seville way	installed 10/24/11	1.62	0.59 cubic feet
3	Public	West Coast Storm	Seville way & Avalon dr	installed 10/24/11	1.62	0.59 cubic feet
4	Public	West Coast Storm	125 Appian way	installed 10/24/11	1.62	0.59 cubic feet
5	Public	West Coast Storm	101 Appian way	installed 10/24/11	1.62	0.59 cubic feet
6	Public	West Coast Storm	Almanor & Yosemite	installed 10/24/11	1.62	0.59 cubic feet
7	Public	West Coast Storm	523 Yosemite	installed 10/24/11	1.62	0.59 cubic feet
8	Public	West Coast Storm	Valverde dr & Avalon	installed 10/24/11	1.62	0.59 cubic feet
9	Public	West Coast Storm	Alta Vista dr & Conmor dr	installed 10/25/11	1.62	0.59 cubic feet
10	Public	West Coast Storm	Springwood wy & Manor dr	installed 10/25/11	1.62	0.59 cubic feet
11	Public	West Coast Storm	Southwood & Fairway	installed 10/25/11	1.62	0.59 cubic feet
12	Public	West Coast Storm	El Camino Real & Ponderosa	installed 10/26/11	1.62	0.59 cubic feet
13	Public	West Coast Storm	El Camino Real & Ponderosa	installed 10/26/11	1.62	0.59 cubic feet
14	Public	West Coast Storm	Starlite & Canal	installed 10/25/11	1.62	0.59 cubic feet
15	Public	West Coast Storm	Starlite & Canal	installed 10/25/11	1.62	0.59 cubic feet
16	Public	West Coast Storm	128 Starlite	installed 10/26/11	1.62	0.59 cubic feet
17	Public	West Coast Storm	Maple & Canal	installed 10/25/11	1.62	0.59 cubic feet
18	Public	West Coast Storm	Maple & Canal	installed 10/26/11	1.62	0.59 cubic feet
19	Public	West Coast Storm	323 Canal	installed 10/26/11	1.62	0.59 cubic feet
20	Public	West Coast Storm	43 Linden	installed 10/26/11	1.62	0.59 cubic feet
21	Public	West Coast Storm	88 Linden	installed 10/26/11	1.62	0.59 cubic feet
22	Public	West Coast Storm	Victory & Ryan	installed 10/26/11	1.62	0.59 cubic feet

Device ID	Public or Private	Device Name	Location (Cross Streets)	Installation Date/Anticipated Installation Date	Estimated Total Area Treated (acres)	Trash Load Reduced
23	Public	West Coast Storm	Victory & Maple	installed 10/31/11	1.62	0.59 cubic feet
24	Public	West Coast Storm	260 Maple	installed 10/27/11	1.62	0.59 cubic feet
25	Public	West Coast Storm	Noor & Huntington	installed 10/27/11	1.62	0.59 cubic feet
26	Public	West Coast Storm	137 Linden	installed 10/31/11	1.62	0.59 cubic feet
27						
28	Public	West Coast Storm	San Mateo & Lowrie	installed 10/27/11	1.62	0.59 cubic feet
29	Public	West Coast Storm	1369 Lowrie	installed 10/28/11	1.62	0.59 cubic feet
30	Public	West Coast Storm	1321 Lowrie	installed 10/28/11	1.62	0.59 cubic feet
31						
32	Public	West Coast Storm	480 Littlefield	installed 10/28/11	1.62	0.59 cubic feet
33	Public	West Coast Storm	1327 Lowrie	installed 10/28/11	1.62	0.59 cubic feet
34	Public	West Coast Storm	Harbor way & Utah	installed 10/28/11	1.62	0.59 cubic feet
35	Public	West Coast Storm	Beacon & Airport	installed 10/28/11	1.62	0.59 cubic feet
36	Public	West Coast Storm	192 Beacon st	installed 10/28/11	1.62	0.59 cubic feet
37	Public	West Coast Storm	195 Belle Air rd	installed 11/02/11	1.62	0.59 cubic feet
38	Public	West Coast Storm	Harris & Harbor	installed 11/02/11	1.62	0.59 cubic feet
39						
40	Public	West Coast Storm	Mitchell & Harris	installed 11/02/11	1.62	0.59 cubic feet
41	Public	West Coast Storm	184 Harbor Way	installed 10/31/11	1.62	0.59 cubic feet
42	Public	West Coast Storm	300 Swift ave	installed 10/31/11	1.62	0.59 cubic feet
43	Public	West Coast Storm	451 E Jaime ct	installed 10/31/11	1.62	0.59 cubic feet
44						
45	Public	West Coast Storm	383 E Grand ave	installed 10/31/11	1.62	0.59 cubic feet
46	Public	West Coast Storm	Grand view and Point San Bruno	installed 10/31/11	1.62	0.59 cubic feet
47	Public	West Coast Storm	NW on DNA way	installed 11/01/11	1.62	0.59 cubic feet

Device ID	Public or Private	Device Name	Location (Cross Streets)	Installation Date/Anticipated Installation Date	Estimated Total Area Treated (acres)	Trash Load Reduced
48						
49	Public	West Coast Storm	801 Forbes	installed 11/01/11	1.62	0.59 cubic feet
50						
51	Public	West Coast Storm	701 Forbes	installed 11/17/11	1.62	0.59 cubic feet
52	Public	West Coast Storm	WB on Forbes	installed 11/01/11	1.62	0.59 cubic feet
53	Public	West Coast Storm	501 Forbes ave	installed 11/01/11	1.62	0.59 cubic feet
54	Public	West Coast Storm	405 Eccles ave	installed 11/01/11	1.62	0.59 cubic feet
55	Public	West Coast Storm	526 Eccles ave	installed 11/01/11	1.62	0.59 cubic feet
56	Public	West Coast Storm	570 Eccles ave	installed 11/01/11	1.62	0.59 cubic feet
57	Public	West Coast Storm	Oyster point blvd & Eccles ave	installed 11/02/11	1.62	0.59 cubic feet
58						
59	Public	West Coast Storm	384 Oyster point blvd	installed 11/02/11	1.62	0.59 cubic feet
60	Public	West Coast Storm	270 oyster point blvd	installed 11/02/11	1.62	0.59 cubic feet
61	Public	West Coast Storm	Gateway blvd & Oyster point blvd	installed 11/02/11	1.62	0.59 cubic feet
62						
63	Public	West Coast Storm	444 Allerton ave	installed 11/02/11	1.62	0.59 cubic feet
64	Public	West Coast Storm	342 Allerton ave	installed 11/03/11	1.62	0.59 cubic feet
65	Public	West Coast Storm	92 Jefferson	installed 11/03/11	1.62	0.59 cubic feet
66	Public	West Coast Storm	608 Larch ave	installed 11/03/11	1.62	0.59 cubic feet
67	Public	West Coast Storm	237 James ct	installed 11/04/11	1.62	0.59 cubic feet
68	Public	West Coast Storm	36 Nursery way	installed 11/04/11	1.62	0.59 cubic feet
69	Public	West Coast Storm	93 nursery way	installed 11/03/11	1.62	0.59 cubic feet
70	Public	West Coast Storm	480 Grand ave	installed 11/03/11	1.62	0.59 cubic feet
71	Public	West Coast Storm	314 Willow	installed 11/03/11	1.62	0.59 cubic feet

Device ID	Public or Private	Device Name	Location (Cross Streets)	Installation Date/Anticipated Installation Date	Estimated Total Area Treated (acres)	Trash Load Reduced
72	Public	West Coast Storm	355 Forest view dr	installed 11/17/11	1.62	0.59 cubic feet
73	Public	West Coast Storm	Forest view and Morningside	installed 11/03/11	1.62	0.59 cubic feet
74	Public	West Coast Storm	1173 Morningside ave	installed 11/04/11	1.62	0.59 cubic feet
75	Public	West Coast Storm	450 Holly	installed 11/04/11	1.62	0.59 cubic feet
76	Public	West Coast Storm	414 Holley	installed 11/04/11	1.62	0.59 cubic feet
77	Public	West Coast Storm	Holly ave & Crestwood	installed 11/17/11	1.62	0.59 cubic feet
78	Public	West Coast Storm	Dellbrook & Crestwood	installed 11/17/11	1.62	0.59 cubic feet
79						
80	Public	West Coast Storm	1107 Mission	installed 11/04/11	1.62	0.59 cubic feet
81	Public	West Coast Storm	Duval &Graystone	installed 11/17/11	1.62	0.59 cubic feet
82						
83	Public	West Coast Storm	125 El Campo dr	installed 11/17/11	1.62	0.59 cubic feet
84	Public	West Coast Storm	315 Camaritas Ave	installed 11/17/11	1.62	0.59 cubic feet
85	Public	West Coast Storm	119 Arroyo Dr	installed 11/18/11	1.62	0.59 cubic feet
86						
87	Public	West Coast Storm	1165 El Camino Real	installed 11/16/11	1.62	0.59 cubic feet
88						
89	Public	West Coast Storm	Linden & Victory	installed 11/18/11	1.62	0.59 cubic feet
90						
91						
92	Public	West Coast Storm	212 Shaw rd	installed 11/15/11	1.62	0.59 cubic feet
93						
94						
95	Public	West Coast Storm	300 Shaw rd	installed 11/16/11	1.62	0.59 cubic feet
96						

Device ID	Public or Private	Device Name	Location (Cross Streets)	Installation Date/Anticipated Installation Date	Estimated Total Area Treated (acres)	Trash Load Reduced
97						
98						
99						
100						
101	Public	West Coast Storm	366 El Cortez ave	installed 11/15/11	1.62	0.59 cubic feet
102	Public	West Coast Storm	366 El Cortez ave	installed 11/16/11	1.62	0.59 cubic feet
103	Public	West Coast Storm	116 Francisco ave	installed 11/16/11	1.62	0.59 cubic feet
104	Public	West Coast Storm	Francisco &Sonora	installed 11/16/11	1.62	0.59 cubic feet
105	Public	West Coast Storm	1341 Lowrie ave	installed 11/15/11	1.62	0.59 cubic feet
106	Public	West Coast Storm	Shaw & San Mateo	installed 11/16/11	1.62	0.59 cubic feet
107	Public	West Coast Storm	Shaw & San Mateo	installed 11/16/11	1.62	0.59 cubic feet
NA	Public	Continuous Deflective Separator (Contech)	Miller Parking Garage	Post MRP	0.5	.019 cubic feet
NA	Private	Continuous Deflective Separator (Contech)	360 Shaw Road	Pre MRP	1.5	0.57 cubic feet
NA	Private	Continuous Deflective Separator (Contech)	Westbourogh Hills Plaza	Post MRP	1.5	0.57 cubic feet
NA	Private	Continuous Deflective Separator (Contech)	Blue Line Transfer Station	Pre MRP	9.5	3.62 cubic feet
NA	Private	Continuous Deflective Separator (Contech)	Dollar Tree Store	Pre MRP	0.25	0.09 cubic feet
NA	Private	Continuous Deflective Separator (Contech)	Lowe's of SSF	Pre MRP	3	1.14 cubic feet
NA	Private	Continuous Deflective Separator (Contech)	Seven Eleven	Post MRP	0.1	0.04 cubic feet
NA	Private	Continuous Deflective Separator (Contech)	Bart	Pre MRP	2	0.76 cubic feet

QF-6: Creek/Channel/Shoreline Cleanups

Creek/channel/shoreline cleanups have been successful in removing large amounts of trash from San Francisco Bay area creeks and waterways; and increasing citizen's awareness of trash issues within their communities. Creek/channel/shoreline cleanups are conducted as single-day events or throughout the year by volunteers and municipal agencies. Since volunteers and municipal agencies have the common goal of clean creeks and waterways, their efforts sometimes overlap. This is apparent with some municipal agencies using volunteers to help assess and clean designated trash hot spots during single-day volunteer events.

Baseline Level of Implementation

Trash reduced via creek/channel/shoreline cleanups was not accounted for in the City of South San Francisco's baseline trash load described in Section 2.0. Therefore, implementation of any of the control measures described in this section is considered to be an enhancement and can be used to demonstrate progress towards load reduction goals.

Enhanced Level of Implementation

Prior to July 1, 2014, the City of South San Francisco will conduct MRP-required[9] and the following non MRP-required creek/channel/shoreline cleanups[10] listed below. Both types of cleanups will be conducted each year and the volume of trash removed will be tracked to demonstrate trash loads reduced.

The City of South San Francisco will conduct the MRP required creek/channel/shoreline cleanup on the third Saturday in September. Additional creek/channel/shoreline cleanups will be conducted on National Rivers Day with the aid of the San Mateo County Community Care Program, formerly known as the Weekend Work Program and the Community Preservation Task Force. The Community Preservation Task Force will also conduct creek cleanups at various times during the year.
The City of South San Francisco will work with local high school environmental clubs and other community organizations to conduct additional creek/shoreline cleanups.
Non MRP-required creek/channel/shoreline cleanups may include the following:

The City of South San Francisco Environmental Compliance Program will work with the Public Works Department to correct illegal dump sites by removing trash when dumping occurs.

The 800 gallon estimate was based on previous creek cleanup data collected during calendar years 2009, 2010 and 2011. Volumes are a conservative estimate of how much trash could be collected during 3-4 additional creek/shoreline trash cleanups each year. The volume is based off of records kept from each annual creek cleanup, which do not include large items such as wood debris and furniture found alongside the creek, creek bank and shoreline.

[9] Creek/channel/shoreline cleanups conducted in accordance with Permit Provision C.10.b.
[6] All "other" creek/channel/shoreline cleanups conducted by a municipality that are not required by Provision C.10.b.

Percent Reduction from Enhancements

The total estimated annual volume of trash that will be reduced by July 1, 2014 as a result of implementing creek/channel/shoreline cleanups is **800 gallons**. This volume is equal to approximately a **3.9 percent** reduction in the baseline trash load to urban creeks from the municipal separate storm sewer system (MS4) owned and operated by the City of South San Francisco. Both values provided within this section are included in Trash Load Reduction Summary Table included in Section 4.

5.0 SUMMARY OF TRASH CONTROL MEASURE ENHANCEMENTS

The City of South San Francisco is committed to reducing the potential for trash impacts in local water bodies in the San Francisco Bay Area. The planned enhanced trash control measures described in Section 4.0 are also listed in Table 4-1. The enhancements are intended to comply with the 40% trash load reduction goal in MRP provision C.10.

The City of South San Francisco will utilize a polystyrene foam food ban policy, public education and outreach programs, reduction of trash from uncovered loads, enhanced anti littering and illegal dumping enforcement, enhanced on-land clean-up, enhanced street sweeping, enhanced inlet maintenance, full trash capture and creek clean-ups to meet the 40% trash reduction required by July 1, 2014.

Table 5-1. Planned enhanced trash control measure implementation within the jurisdictional boundaries of the City of South San Francisco and associated trash loads reduced.

Trash Control Measure	Summary Description of Control Measure	% Reduction (Credits)	Trash Load Reduced (Gallons)	Cumulative % Reduction (Compared to Baseline)
Existing Enhanced Street Sweeping	Existing sweeping at a frequency above the baseline ceilings presented in Section 2.0	NA	790	3.8
Polystyrene Foam Food Service Ware Ban (CR-2)	Polystyrene Ban October 2008	8[11]	1,579	11.5
Public Education and Outreach Programs (CR-3)	Advertising Campaigns, Outreach to School-age Children, Media Relations, Community Outreach	8[12]	1,579	19.2
Activities to Reduce Trash from Uncovered Loads (CR-4)	Prescriptive language in municipal contracts for trash and debris haulers	1	197	20.2
Anti-Littering and Illegal Dumping Enforcement Activities (CR-5)	Investigations of complaints, implementation of enforcement procedures, and collection of evidence	2[13]	395	22.1
Enhanced On-land Trash Cleanups (Volunteer and/or Municipal) (QF-1)	Routine or Regularly Scheduled Litter Pickup and Removal, Illegal Dump Site Response and Abatement, Interagency Cleanup Coordination and Cleanup, Litter Pickup Event Coordination and Cleanup, Organized Single-day Cleanup Events, Keep America Beautiful, Other Organized Cleanup Events, Business Improvement District Cleanups, Routine Cleanups of Selected Hot Spots	NA	800	26.0

[11] The actual trash load reduction realized from this trash control measure is 7.7 percent due to the effects of the trash load reduction derived from the City's existing enhanced street sweeping program.

[12] The actual trash load reduction realized from this trash control measure is 7.7 percent due to the effects of the trash load reduction derived from the City's existing enhanced street sweeping program.

[13] The actual trash load reduction realized from this trash control measure is 1.9 percent due to the effects of the trash load reduction derived from the City's existing enhanced street sweeping program.

Trash Control Measure	Summary Description of Control Measure	% Reduction (Credits)	Trash Load Reduced (Gallons)	Cumulative % Reduction (Compared to Baseline)
Additional Enhanced Street Sweeping (QF-2)	Sweep all areas of the City weekly, Sweeping includes parking control	NA	1,866	35.1
Enhanced Storm Drain Inlet Maintenance (QF-4)	Clean retail, commercial/industrial, and high density residential inlets twice per year	NA	69	35.4
Full-capture Treatment Devices (QF-5)	Install 107 small trash capture and 8 large trash capture devices	NA	548	38.1
Trash Control Measure	**Summary Description of Control Measure**	**% Reduction (Credits)**	**Trash Load Reduced (Gallons)**	**Cumulative % Reduction (Compared to Baseline)**
Creek/Channel/Shoreline Cleanups (Volunteer and/or Municipal) (QF-6)	Volunteer led events - National River Cleanup Day, Coastal Cleanup Day, Other Organized Single-day Events Permittee-led Cleanup Activities - Routine or Regularly Scheduled Creek Maintenance, Illegal Dump Site Correction, other Organized Single-day Events	NA	800	42.0

5.1 Annual Reporting and Progress Towards Trash Load Reduction Goal(s)

Consistent with MRP Provision C.10.d (i), the City of South San Francisco intends to report on progress towards MRP trash load reduction goals on an annual basis beginning with the Fiscal Year 2011-2012 Annual Report. Annual reports will include:

1. A brief summary of all enhanced trash load reduction control measures implemented to-date;
2. The dominant types of trash likely removed via these control measures;
3. Total trash loads removed (credits and quantifications) via each control measure implementation; and
4. A summary and quantification of progress towards trash load reduction goals.

Similar to other MRP provision, annual reporting formats will be consistent region-wide. Annual reports are intended to provide a summary of control measure implementation and demonstrate progress toward MRP trash reduction goals. For more detailed information on specific control measures, City of South San Francisco will retain supporting documentation on trash load reduction control measure implementation. These records should have a level of specificity consistent with the trash load reduction tracking methods described in the *BASMAA Trash Load Reduction Tracking Method Technical Report* (BASMAA 2011e).

5.2 Considerations of Uncertainties

Baseline trash loading and load reduction estimates are based on the best available information at the time this Short-Term Plan was developed. As with any stormwater loading and reduction estimate, a number of assumptions were used during calculations and therefore uncertainty is inherent in the baseline trash load estimate presented in Section 2.0 and the load reduction estimate presented in this section. For these reasons, the baseline loading estimates presented in this plan should be considered first-order estimates. During the implementation of this Short-Term Plan and subsequent plans, additional information may become available to allow the calculation of a more robust baseline load.

6.0 IMPLEMENTATION SCHEDULE

Implementation of enhanced trash control measures by the City of South San Francisco is currently planned to occur in a timeframe consistent with MRP requirements. A preliminary implementation schedule for all planned enhancements is described in Table 5-1. This schedule provides a timeframe for reducing trash discharged from the City of South San Francisco's MS4 by 40%.

Based on new information that becomes available during the implementation of this Short-Term Plan (e.g., revisions to baseline loading estimates or load reduction credits of quantification formulas), the City of South San Francisco may chose to amend or revise this Plan and/or the associated implementation schedule. If revisions or amendments occur, a revised Short-Term Plan and implementation schedule will be submitted to the Water Board via the City of South San Francisco's annual reporting process.

Table 6-1. Preliminary implementation schedule for enhanced trash control measures in the City of South San Francisco

Trash Control Measure	Beginning Date of Implementation
Polystyrene Foam Food Service Ware Ban (CR-2)	Pre-MRP (October 1, 2008)
Public Education and Outreach Programs (CR-3)	Currently and Prior to June 2012
Activities to Reduce Trash from Uncovered Loads (CR-4)	Prior to July 2012
Anti-Littering and Illegal Dumping Enforcement Activities (CR-5)	Prior to July 2012
Enhanced On-land Trash Cleanups (Volunteer and/or Municipal) (QF-1)	April 2012
Enhanced Street Sweeping (QF-2)	January 2012
Enhanced Storm Drain Inlet Maintenance (QF-4)	February 2012
Full-capture Treatment Devices (QF-5)	Pre-MRP and October 2011
Creek/Channel/Shoreline Cleanups (Volunteer and/or Municipal) (QF-6)	Prior to July 2012

7.0 REFERENCES

Allison R.A. and F.H.S. Chiew 1995. Monitoring stormwater pollution from various land uses in an urban catchment. Proceedings from the 2nd International Symposium on Urban Stormwater Management, Melbourne, 551-516.

Allison, R.A., T.A. Walker, F.H.S. Chiew, I.C. O'Neill and T.A McMahon 1998. From Roads to rivers: Gross pollutant removal from urban waterways. Report 98/6. Cooperative Research Centre for Catchment Hydrology. Victoria, Australia. May 1998.

Armitage, N. 2001. The removal of Urban Litter from Stormwater Drainage Systems. Ch. 19 in Stormwater Collection Systems Design Handbook. L. W. Mays, Ed., McGraw-Hill Companies, Inc. ISBN 0-07-135471-9, New York, USA, 2001, 35 pp.

Armitage, N. 2003. The removal of urban solid waste from stormwater drains. Prepared for the International Workshop on Global Developments in Urban Drainage Management, Indian Institute of Technology, Bombay, Mumbai India. 5-7 February 2003.

Armitage, N. 2007. The reduction of urban litter in the stormwater drains of South Africa. Urban Water Journal Vol. 4, No. 3: 151-172. September 2007.

Armitage N., A. Rooseboom, C. Nel, and P. Townshend 1998. "The removal of Urban Litter from Stormwater Conduits and Streams. *Water Research Commission* (South Africa) Report No. TT 95/98, Prestoria.

Armitage, N. and A. Rooseboom 2000. The removal of urban litter from stormwater conduits and streams: Paper 1 – The quantities involved and catchment litter management options. Water S.A. Vol. 26. No. 2: 181-187.

BASMAA (Bay Area Stormwater Management Agencies Association). 2011a. Progress Report on Methods to Estimate Baseline Trash Loads from Bay Area Municipal Stormwater Systems and Track Loads Reduced. February 2011.

BASMAA (Bay Area Stormwater Management Agencies Association). 2011b. Method to Estimate Baseline Trash Loads from Bay Area Municipal Stormwater Systems: Technical Memorandum #1. Prepared by EOA, Inc. April 2011.

BASMAA (Bay Area Stormwater Management Agencies Association). 2011c. Sampling and Analysis Plan. Prepared by EOA, Inc. April 2011.

BASMAA (Bay Area Stormwater Management Agencies Association). 2011d. Trash Load Reduction Tracking Method: Technical Memorandum #1 – Literature Review. Prepared by EOA, Inc. May 2011.

BASMAA (Bay Area Stormwater Management Agencies Association). 2012a. Trash Load Reduction Tracking Method: Technical Report. Prepared by EOA, Inc. February.

BASMAA (Bay Area Stormwater Management Agencies Association). 2012b. Trash Baseline Generation Rates: Technical Report. Prepared by EOA, Inc. February.

County of Los Angeles. 2002. Los Angeles County Litter Monitoring Plan for the Los Angeles River and Ballona Creek Trash Total Maximum Daily Load. May 30, 2002.

County of Los Angeles. 2004a. Trash Baseline Monitoring Results Los Angles River and Ballona Creek Watershed. Los Angeles County Department of Public Works. February 17, 2004.

County of Los Angeles 2004b. Trash Baseline Monitoring for Los Angles River and Ballona Creek Watersheds. Los Angeles County Department of Public Works. May 6, 2004.

County of Los Angeles, Department of Public Works, Environmental Programs Division. 2007. *An Overview of Carryout Bags in Los Angeles County: A Staff Report to the Los Angeles County Board of Supervisors.* Alhambra, CA. http://dpw.lacounty.gov/epd/PlasticBags/PDF/PlasticBagReport_08-2007.pdf. August 2007.

Kim, L.H, M. Kayhanian, M.K. Stenstrom 2004. Event mean concentration and loading of litter from highways during storms. Science of the Total Environment Vol 330: 101-113.